

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

AS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/168,770 10/08/98 SHAH

R TH-1042(US)

EXAMINER

IM52/0501

DEL S CHRISTENSEN
SHELL OIL COMPANY
INTELLECTUAL PROPERTY
P O BOX 2463
HOUSTON TX 77252-2463

VARCOE JR, F	
ART UNIT	PAPER NUMBER

1764

DATE MAILED:

05/01/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/168,770

Applicant(s)

Shah et al.

Examiner

Varcoe

Group Art Unit

1764



☒ Responsive to communication(s) filed on Mar 7, 2001

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-15 is/are pending in the application

Of the above, claim(s) 8-12 is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-7 and 13-15 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1764

DETAILED ACTION

Presently claims 1-7 and 13-15 are active in this application. Claims 8-12 have been withdrawn from consideration as non-elected, but have not yet been canceled.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-7 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Ruhl, EP 0 450 872 A1.

With regard to claim 1, Ruhl discloses a process heater comprising an oxidation chamber (Figure 1 (30)), having an inlet (40) for oxidant, an outlet (54) for combustion products, and a flow path between the inlet and the outlet. Ruhl discloses a fuel conduit (36) capable of transporting a fuel mixture to a plurality of fuel nozzles (Figure 4 (64)) within the oxidation chamber, each nozzle providing communication from within the fuel conduit to the oxidation chamber, with each nozzle along the flow path between the inlet and the outlet. Ruhl discloses a preheater (page 5 line 44) in communication with the oxidation chamber inlet, the preheater capable of increasing the temperature of the oxidant to a temperature resulting in the combined oxidant and fuel from the fuel nozzle closest to the oxidation chamber inlet being hotter than the autoignition temperature (page 5 lines 51-57) of the combined oxidant and fuel from the fuel nozzle closest to the oxidation chamber inlet. Ruhl discloses a process chamber (Figure 1 (20)) in heat exchange relationship to the oxidation chamber wherein the heat transferred from the

Art Unit: 1764

oxidation chamber does not (page 5 line 51-57) cause the temperature of the mixture within the oxidation chamber in the vicinity of each fuel nozzle to decrease below the autoignition temperature of the combined mixture in the oxidation chamber in the vicinity of that fuel nozzle and the fuel nozzles are capable of distributing the fuel into the oxidation chamber without forming a flame. While Ruhl's Figure 1 appears to show a flame, and reference number 50 is used to indicate a "flame zone" (page 5 lines 14-15), since the fuel and oxidant are heated above the autoignition temperature (page 5 lines 11-15; lines 51-57) prior to mixing, the system is capable of carrying out combustion without forming a flame.

With regard to claim 2, Ruhl discloses a coke inhibitor injection system in fluid communication with the fuel supply conduit wherein an amount of coke inhibitor supplied can be effective to inhibit coke formation at fuel conduit operating temperatures. Since Ruhl discloses that a coke inhibitor has been added to the fuel (page 5 lines 8-10), it is inherent in his apparatus that means for adding the inhibitor must have been present.

With regard to claim 3, Ruhl discloses a fuel conduit that is tubular and is essentially centrally located within the process chamber (Figure 1)

With regard to claim 4, Ruhl discloses an oxidation reaction chamber that is essentially centrally located within the process chamber (Figure 1)

Art Unit: 1764

With regard to claim 5, Ruhl discloses a pyrolysis reaction chamber for the production of olefins (page 3 line 16).

With regard to claim 5, Ruhl discloses a pyrolysis reaction chamber for the production of olefins (page 3 line 16).

With regard to claim 6, Ruhl discloses a process chamber effective as a steam methane reforming reaction chamber (page 3 line 10).

With regard to claims 7 and 13-15, intended uses for the apparatus do not patentably distinguish the apparatus of the present claim from the prior art.

Response to Arguments

2. Applicant's arguments with respect to claims 1-7 and 13-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ruhl et al. U.S. Patent 6,153,152.

Art Unit: 1764

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Varcoe, whose telephone number is (703) 306-5477. The examiner can normally be reached Monday through Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode, can be reached on (703) 308-4311.

The FAX telephone number for this Group Art Unit is (703) 305-3599 (for Official papers after Final), (703) 305-5408 (for other Official papers) and (703) 305-6357 (for Unofficial papers).

When filing a FAX in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of the application. This will expedite processing your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Marian C. Knode
MARIAN C. KNODE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

RV
March 18, 2001